

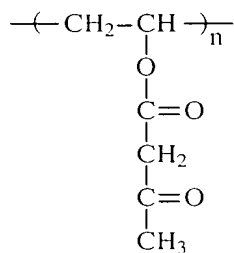
Remarks

Claims 1-15 are pending. Favorable reconsideration is respectfully requested.

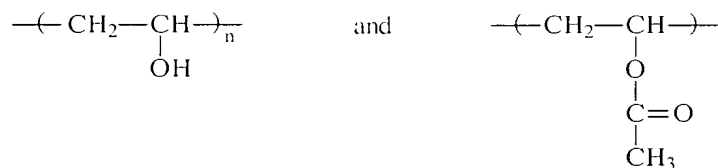
Claims 1-15 have been rejected under 35 U.S.C. § 103(a) as unpatentable over *Shimokawa et al.* U.S. Patent 4,350,788 ("*Shimokawa*"). Applicants respectfully traverse this rejection.

The present invention is directed to unique polyvinylacetal-grafted polymers, prepared by polymerizing an unsaturated monomer, preferably vinyl acetate, in the presence of a polyvinylacetal polymer containing 0.1 mol percent to 20 mol percent of acetal units derived from aldehydes having 3 to 7 carbon atoms, the lowest molecular weight aldehyde thus being propionaldehyde (propanal). The grafted polymer may be present in the form of an aqueous dispersion, or may be dried, preferably spray dried, to form a redispersible polymer powder. The latter are easily redispersed to form dispersions. The grafted polymers are useful, *inter alia*, in cement formulations, where they improve cement stability as compared to other polymer dispersions or redispersible polymer powders.

Shimokawa does not disclose such polymers, nor does he teach or suggest them. *Shimokawa* discloses the preparation of polymer dispersions in the presence of acetoacetylated polyvinyl alcohol as a stabilizer. The acetoacetylated polyvinylalcohol stabilities of *Shimokawa* are prepared by reacting diketene with polyvinyl alcohol, and have the structure:

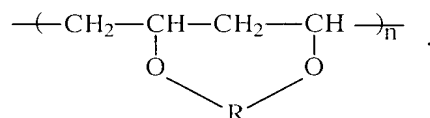


The *Shimokawa* polymers further contain unreacted OH groups and non-hydrolyzed acetate groups as repeating units:

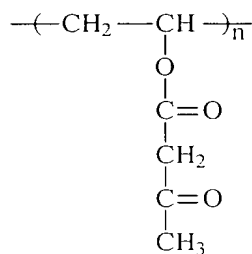


The subject invention polymers may also contain the latter two repeating units, vinyl alcohol and vinyl acetate (derived) units.

However, the subject invention stabilizers contain no acetoacetate moieties, but rather contain acetal moieties derived from a C₃ to C₇ aldehyde:



As can be seen from the structure, such moieties are completely different for *Shimokawa's* acetoacetate moieties:



which are esters, not acetals (which are ethers).

Moreover, the properties are different as well. Acetoacetates are esters which are prone to both acid as well as base-catalyzed hydrolysis, whereas acetals are not hydrolyzed by bases. Thus, in cement formulations, which are highly basic, the properties of the polymers

of *Shimokawa* are expected to change over time by hydrolysis of the acetoacetate groups back to polyvinyl alcohol and acetoacetate salts (e.g. calcium salts), whereas the polymers of the present invention, containing grafted polyacetals, are stable to hydrolysis under these conditions.

Shimokawa does not disclose the acetalized PVA polymers used in the present invention as stabilizers, producing a polyacetal grafted polymer. Rather, *Shimokawa* teaches acetoacetylated polymers, which are completely different. Withdrawal of the rejection of claims 1-15 over *Shimokawa* is solicited.

Applicants submit that the claims are now in condition for Allowance, and respectfully request a Notice to that effect. If the Examiner believes that further discussion will advance the prosecution of the Application, the Examiner is highly encouraged to telephone Applicants' attorney at the number given below.

Respectfully submitted,

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